FAA Aviation NEWS

July-August 1990

A DOT/FAA FLIGHT STANDARDS SAFETY PUBLICATION

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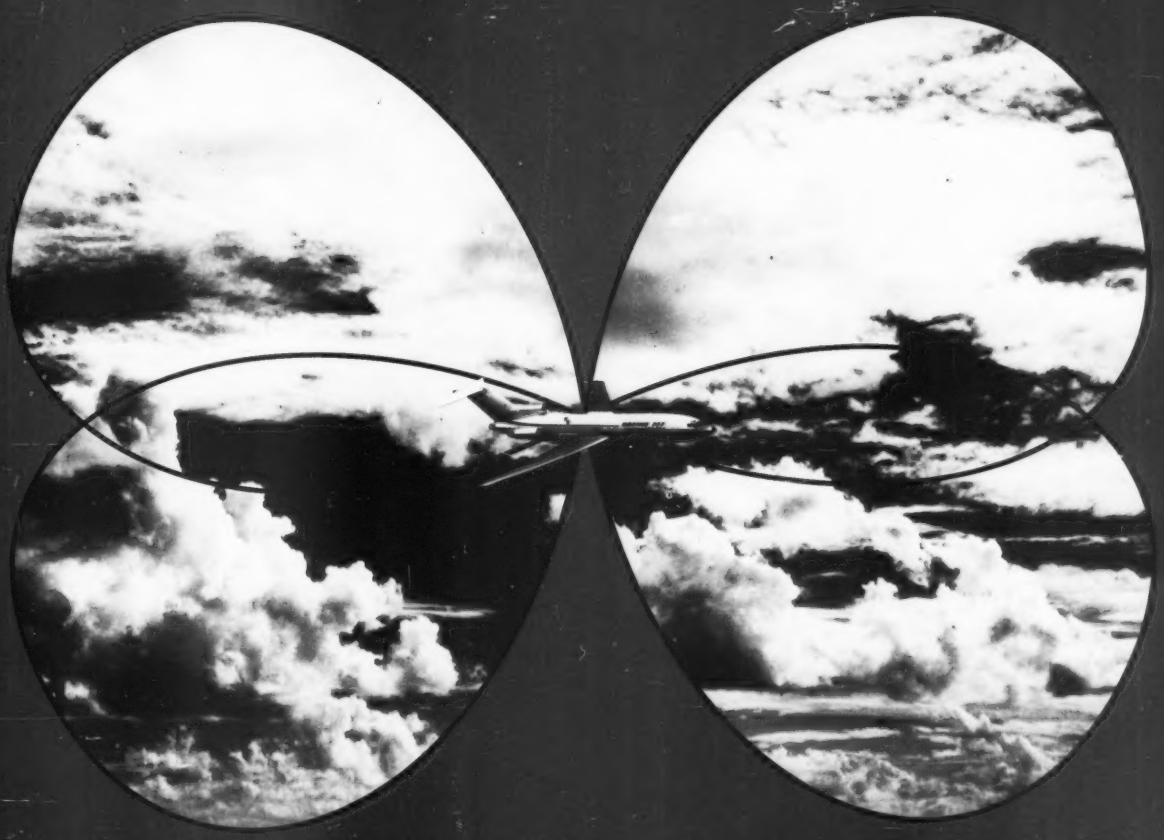

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Federal Aviation Administration

FAA Aviation NEWS

July/August 1990
Volume 29, Number 4

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BRIEFS

HOLDING SPEED RESTRICTIONS. The recommended maximum holding speed for civil turbojet aircraft has been increased to 230 knots IAS at MHA to 14,000 feet and to 265 knots IAS above 14,000 feet. This is in response to air traffic controllers' reports that aircraft holding at high altitude hlding fixes often exceeded the protected airspace because they had to exceed the recommended maximum holding airspeed of 230 knots IAS. Pilots then failed to notify ATC of their increased requirements. This typically occurred under conditions of icing or turbulence.

Pilots who exceed the speed limits are required to notify ATC, in order that the protected area can be increased, radar vectors provided, and alternate instructions issued as needed. Likewise, ATC must be advised when the aircraft is able to resume operating within the maximum recommended holding speed. The maximum speeds for various types of aircraft are given in Paragraph 347 of the Airman's Information Manual.

BODY ALTITUDE. According to a recent study by Canadian investigators, if you are a pilot who smokes, and have smoked seven cigarettes prior to going flying, your body will not be at the same altitude as the aircraft cabin. The carbon monoxide from the cigarettes will impair the ability of the hemoglobin in your blood to carry oxygen. With a 10% carboxyhemoglobin (CoHb) saturation, or seven cigarettes, if Aircraft Cabin Altitude = 5,000' ASL, Your Physiological Altitude = 12,500' ASL, and if Aircraft Cabin Altitude = 10,000' ASL, Your Physiological Altitude = 15,000' ASL.

CARAVAN NOSE GEAR SHIMMY. Owners and operators of Cessna models 208 and 208A (20800001 through 20800130) and model 208B (208B001 through 208B0086) are required to comply with Airworthiness Directive 99-05-04 within the next 100 hours of service, unless already accomplished. Inspection of the nosewheel engine mount ring lower attachment points and replacement of the nose landing dampener are required, because of recent reports of shimmy dampener failures in these models.

Affected persons who have not received the A.D. Notice should contact Douglas W. Haig, Wichita Aircraft Certification Office, Mid-Continent Airport, 1801 Airport Road, Room 100, Wichita, KS 67209. Telephone (316 946-4409.

Remedial Training

The FAA has changed its policy dealing with certain violations of the Federal Aviation Regulations by certificated airmen (both pilots and non-pilot airmen) not exercising the privileges of their certificates for compensation or hire in air transportation at the time of the violation. Under the new Corrective Action Through Remedial Training Program the FAA will consider the type of violation and the circumstances surrounding an incident when deciding how to handle the case. The key element in the process is the possibility of rehabilitation through a remedial training program for the airman rather than legal enforcement action. The remedial training program is intended to encourage the airman's future compliance with the FARs by education and training on the subject of the violation.

To show the difference between the old and the new policy consider the following examples of two pilots entering a TCA without authorization.

The first pilot decides to cross a TCA without waiting for authorization. She deliberately turns off her transponder, crosses the TCA and then turns her transponder back on after clearing the TCA. Since this pilot deliberately violated the TCA, under both the old and new policies, she would be contacted by the FAA and legal enforcement action would be started. And depending upon the circumstances, her pilot's license would probably be suspended for a period of time. The record of her violation could also seriously affect her future in aviation.

Now contrast that case with the following one under the new policy. A pilot not used to flying in a high density environment is busy checking radio frequencies and accidently penetrates a TCA. He takes corrective action immediately upon discovering the error and there was no risk to lives or property as a result of the violation. This non-compliance was not deliberate and the airman corrected the problem as soon as it was discovered.

The old policy would have required the FAA to take legal enforcement action on both pilots regardless of the circumstances surrounding the incident. The new policy considers the facts in each case to determine if safety and future compliance with the regulations can be accomplished through training and education rather than through punitive action.

Under the new Corrective Action Through Remedial Training Program, the second pilot in the example could receive a Letter of Investigation from the Flight Standards District Office (FSDO) requesting his cooperation in the investigation and the letter would indicate that after all the facts are examined, he may be allowed to participate in the FAA's Corrective Action through Remedial Training Program in lieu of legal enforcement action. If the investigation shows that remedial training is appropriate, the case will usually be referred to the FSDO's Accident Prevention Specialist (APS) to develop a training program for the pilot designed to prevent future non-compliance. The case can be referred to the airman's local APS, if the airman does not live within the investigating FSDO's jurisdiction.

The exact nature of the required training will vary from airman to airman, and circumstance to circumstance. Ground instruction, flight training, simulator training, training conducted by a mechanic instructor, authorized inspector, designated mechanic examiner, or other training will be required from a qualified training source. The FAA does not conduct the training, but the FAA Accident Prevention Specialist does draft the appropriate training course, following a discussion with the airman.

Of course, just because the airman is eligible for remedial training does not mean that the training will be offered by the FAA or accepted by the airman. But if remedial

(Continued on page 16)

Summer Ice

....That old unseen Devil, Carburetor Freeze-up

Carburetor icing is one of those ongoing perennial causes of aircraft accidents which seem unavoidable, despite engine design improvements and considerable pilot education on this subject. The time-honored float-type carburetor, still in wide use, has an unfortunate capacity for manufacturing ice, even on hot summer days. Ice deposits in the carburetor restrict air intake, so that the fuel mixture becomes excessively rich, power is lost, the engine runs rough and may quit altogether.

To prevent and/or eliminate carburetor ice deposits, FAA regulations require that the manufacturer provide an alternate air intake system, usually involving heated air that passes through a heat exchanger associated with the exhaust manifold. However, very few aircraft have a carburetor temperature gauge, without which it is not a simple matter to determine when or how to use heated air. Manufacturers are cautious about making explicit statements about when to use carburetor heating, other than to advise its use when "carburetor icing conditions prevail"—a condition which may vary for different makes and models of aircraft. In one of their recent reprints from a service bulletin on this subject, the engine manufacturer Avco-Lycoming stops short of endorsing carburetor heat for any given condition of flight, but states that it "has no objection to the consistent standardized use of carburetor heat in the landing configuration."

This still leaves a lot of monkey on the pilot's back as regards knowing when to use heated air. The onset of carburetor icing appears to be related not only to air temperature and relative humidity but also to engine design, aircraft configuration, phase of flight, etc. From 1964 to 1987 the National Transportation Safety Board recorded 1,273 general aviation accidents in which carburetor ice was cited as a cause, or factor, and pilot decision was cited as inappropriate. Seventy of these accidents were fatal, resulting in 117 fatalities and 184 serious injuries. Additionally there were numerous accidents for which the probable cause could not be determined, but could have been related to carburetor ice. (Physical evidence of carb ice is virtually never found. Investigators rely on statements by pilots, passengers and other observers, and by the absence of evidence of other possible causes, such as fuel contamination, fuel line construction, or engine mechanical failures.) The accident sites were widely distributed, from Florida to Alaska, and took place during every month of the year.

By 1987, at the close of this period of the Safety Board's review, the accident rate attributed to carburetor heat had jumped up to 80 per year, and by 1988—the latest year for which we have complete statistics—it was up to 108. To some extent this increase may be due to changes in methods of reporting or determining probable causes, but the fact remains that the judicious use of carburetor heat is something that pilots should be concerned about.

Short of acquiring an aircraft that does not use an "ice maker" type of carburetor (fuel injected engines are essentially immune to the problem and pressure type carburetors are infrequently affected by it), what can a pilot do? There is one point all the experts agree on. Pilots should always be aware of the type of carburetor they are using and its limitations. If it is a float-type, they should be clearly informed as to why and when icing takes place, and how carb heat may be used safely and effectively.

As shown by the drawing (Figure 1), in a float-type carburetor intake air passes through a constricted area known as a venturi. As it emerges from the venturi, velocity increases and pressure drops—which lowers the temperature. At this time

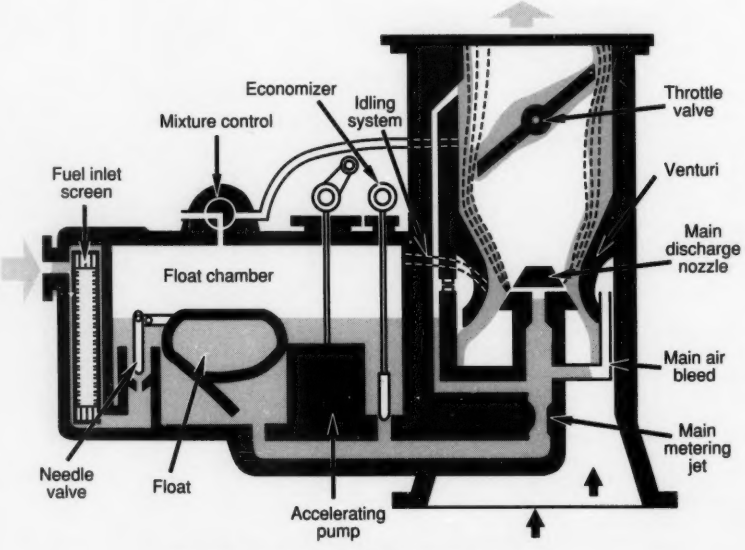


Figure 1. *Ice formation in float-type carburetor.*

the air is mixed with vaporized gasoline, which also reduces the temperature of the fuel. The combined effect can bring the temperature in the carburetor down to the freezing mark, even through the outside air temperature may be as high as 90°F. If there is sufficient moisture in the intake air it may condense and freeze, with ice forming on the carburetor interior and perhaps on the throttle valve plate.

This constriction reduces the intake of air, leading to an overly rich fuel mixture and power loss. This is a self-worsening situation, which is not likely to improve even if the aircraft descends to a warmer altitude: less power means less engine heat and more rapid icing, further reducing air flow. Eventually the engine runs rough and may quit altogether.

The application of full carburetor heat at this point will cause a further reduction of power, perhaps as much as 15 percent, and appear to cause the engine to labor even more severely for a short time. That is enough to frighten some pilots into closing off or reducing carb heat before it can have any beneficial effect: they become concerned about possible detonation.

This is an unwarranted alarm. Avco advises that if the icing is severe, heated air should be used as long as the flight continues in known or suspected carburetor icing conditions. They report that they have never encountered detonation or engine damage at cruise power or lower with full carb heat. They further point out, significantly, that the principal concern of the pilot under icing conditions is not the possibility of detonation, but rather to keep the carburetor ice-free and the engine running, no matter how much heat is required.

The use of partial heat, in an aircraft without an induction temperature gauge, is a dangerous gamble at any time. If icing in the carburetor is not actually present, partial heat could bring it about. For example, if the carburetor internal temperature is at 20°F or lower, any moisture in the air supply will pass directly through into the engine. Partial heating might raise the temperature just enough to liquify this moisture, but not enough to raise the carburetor temperature above freezing. Consequently the liquified moisture might freeze in the carburetor throat. You may only use partial heat safely if you have the type of instrumentation that tells you exactly what the temperature is in the carburetor throat.

During takeoff or in a climb configuration the engine power setting is normally high enough to produce sufficient heating in the carburetor to prevent icing. Using heated intake air might push the engine temperature beyond a safe reading and cause detonation or other destructive damage.

This does not mean that carburetor ice never causes engine problems during high power settings. Whenever humidity is high and there has been lengthy taxiing or prolonged idling before gaining access to the departure runway, ice may form in the carburetor prior to takeoff without the pilot's knowledge. The standard check for rpm drop, with carb heat on briefly, tells you only whether alternate air is available; it does not tell you anything about the presence of icing.

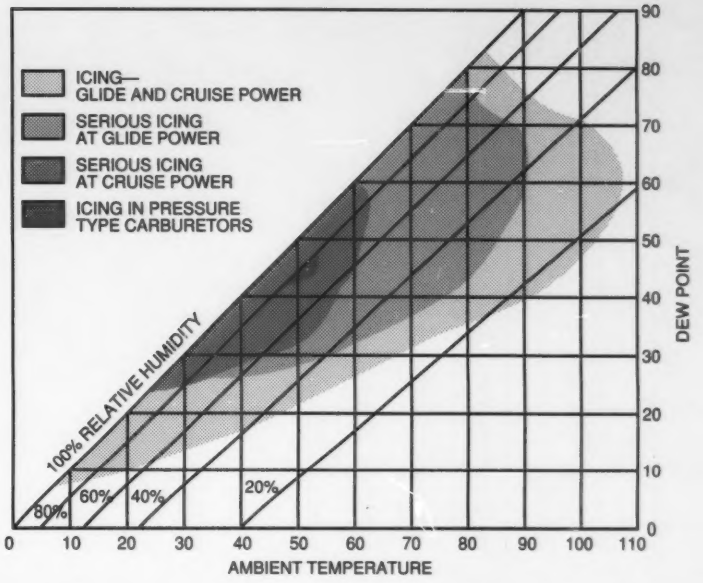


Figure 2. *Icing probability chart prepared by Canada's Ministry of Transport shows the wide range of conditions under which carb ice can be encountered. Graph is useful only as a guideline; the curves would be different for different aircraft.*

In these conditions some pilots may prolong the application of carb heat in order to clear out any existing ice. However, the prevailing opinion is never to use carb heat on the ground for more than a few seconds, since the intake port is not filtered, thereby permitting the engine to ingest harmful debris. The usual practice is to monitor the engine tachometer during takeoff and if it is not within 100 rpm of normal (or equivalent reading for manifold pressure), be prepared to abort the takeoff.

A typical engine failure accident on takeoff, attributed to carburetor icing by the National Transportation Safety Board, took place on January 1, 1987, at Kenesaw, GA, involving a Cessna 182J. During initial climb for a local pleasure flight the pilot reported that his engine was losing power, and began a 180 degree turn to make a downwind landing. However, with carburetor heat on the engine recovered and the pilot decided to climb up to pattern altitude and make a normal approach to his departure runway. But he overshot the runway, and when he attempted to pull up at full power, the engine did not respond. The aircraft stalled into a clump of trees—luckily without serious injury to the pilot.

The NTSB investigation disclosed that prior to departure the aircraft had held position for about 15 minutes.

Many pilots have the impression that carburetor icing is only a threat at glide power, and only then if the spread between ambient temperature and the dewpoint is within 10°F. As the icing probability chart (Figure 2) shows, that narrow envelope applies only to pressure type carburetors. For aircraft with float-type carburetors the envelope is much broader, for flight at cruise power as well as glide power, and icing may occur when the relative humidity is less than 30%.

One common type of icing problem occurs when students flying with an instructor are given a simulated engine failure to deal with. The instructor closes the throttle out, turns carburetor heat on, and tells the student to deal with the situation. At a safe altitude the instructor resumes command of the airplane, only to discover that the engine will not respond. Carburetor icing? How is that possible when he had the heat on?

The answer is simple. If you have been flying for some time without carb heat, at cruise or glide power settings, and the weather is humid, you may have built up a considerable ice blockage in the carburetor. If you turn on carb heat after going to idle power, for the simulated engine failure, that idling engine is not going to provide the alternate air with a lot of heat—quite possibly there won't be enough heat to melt the ice out before an engine stoppage occurs.

For this type of exercise it might be advisable to turn on carb heat well in advance of closing the throttle. For aircraft that are frequently used for this type of training, or are used in environments that are prone to high humidity and cool temperatures, a carburetor temperature gauge might be a worthwhile investment. ■

TCAS: Friend or Foe

Editor's Note: The Sept./Oct. issue of FAA AVIATION NEWS contained an extensive article on TCAS, the automated Traffic-alert and Collision Avoidance System being developed by industry and FAA. The discussion focused on TCAS II, the only system that is now FAA-certificated; it will be required for all airline aircraft with more than 30 passenger seats by December 30, 1993.

Readers found the article helpful, but there were a number of lingering questions about possible conflicts of authority, given a situation in which the Air Traffic Service (ground-based) is vectoring traffic and the airborne sensing equipment is issuing alerts or conflict resolution advisories. There is concern particularly about high density traffic terminal areas where many non-airline aircraft would not have TCAS. We hope that the following dialogue will be helpful.

Q. Does the dual ATC/TCAS combined role in air traffic control have the potential for increasing as well as for reducing collision potentials?

A. This of course has been an ongoing concern throughout the 35 years of collision avoidance system development. With TCAS II, safety has been maximized and the risk of conflict minimized by virtue of the fact that both ATC and TCAS derive their information concerning the position and vertical movement of nearby aircraft from the same source—the Mode A/C (or S) transponder. In addition, the discrete address communications techniques used in the advanced Mode S transponders permit the information processors on board TCAS aircraft to coordinate escape maneuvers with a high degree of reliability and immediacy.

This was tested and proved with over 1,000 staged encounters flown at the FAA Technical Center in Atlantic City, NJ, using an FAA B-727 aircraft equipped with TCAS II prototypes. TCAS II-equipped airplanes have since been flown for thousands of hours throughout the United States, studying surveillance and collision avoidance performance in typical en route and terminal environments and permitting FAA and participating airline pilots to evaluate TCAS design and operation.

These studies have shown that TCAS II is expected to resolve nearly all of the near-midair collision problems involving airline aircraft. One hundred percent success is not possible because of the human factors involved: i.e., TCAS is dependent on the accuracy of the threat aircraft's reported altitude, and on the expectation that the pilot of the threat aircraft will not make an abrupt maneuver that thwarts the TCAS indicated escape maneuver. According to a probability analysis, TCAS II at a maximum might induce one critical near-midair collision for every 50 such critical near midairs that currently take place without TCAS.

Q. What about the possibility that an altitude change directed by TCAS II would place an aircraft hazardously close to another aircraft not involved in the initial TCAS interchange, but flying an ATC assigned altitude?

A. The studies showed that in 90 percent of TCAS-induced altitude changes the vertical displacement is less than 300 feet. This displacement is small in relation to the 1,000 foot vertical separation normally used by air traffic control during instrument flying conditions en route. Therefore the possibility of a TCAS II resolution maneuver infringing on the airspace of the next closest aircraft, when avoiding a threat, is remote. Furthermore, TCAS will "see" and consider all nearby aircraft that are transponder equipped, when issuing a resolution advisory.

Q. What about the very busy terminal areas, like Chicago or L.A.? Isn't the traffic just too dense to allow independent maneuvering? Couldn't TCAS advisories start a "domino" effect there?

A. TCAS II is designed to operate in traffic densities of up to 24 aircraft within 5 nautical miles, which is the highest density envisioned over the next 20 years.

The possibility of causing a "domino effect" (where the vertical displacement of two TCAS-equipped aircraft would bring one of them in conflict with a third aircraft, with a subsequent deviation that would impinge on a fourth aircraft, etc.) was evaluated in the high traffic environment of the Chicago terminal area. It was found that instead of generating an unstable situation, the TCAS II

advisory would actually help bring an accidentally deviating aircraft back to its cleared altitude.

Q. Supposing you have two TCAS aircraft on final approach to parallel runways, where they are projected to come close enough to each other to trigger a TCAS resolution advisory. Would this not result in some unwarranted and hazardous aborts?

A. In this type of landing situation the pilot of a TCAS-equipped aircraft has the option to switch to the Traffic-Advisory-Only mode, which permits traffic advisories to be displayed but prevents the display of resolution advisories.

Q. When responding to TCAS resolution advisories, must a pilot report his intentions immediately, or in advance, to ATC?

A. A timely and reliable crew response to TCAS advisories is essential. Delayed crew response or reluctance of a flight crew to adjust flight path as advised by TCAS—because of ATC clearance provisions, fear of later FAA scrutiny, or other factors—would significantly decrease or negate the protection afforded by TCAS. Therefore flight crews are expected to respond to TCAS in accordance with the following guidelines:

1. TRAFFIC ADVISORIES (TA). Respond by attempting to establish visual contact with any intruder aircraft which may be in the vicinity. Coordinate the traffic search with other crewmembers. If traffic is acquired visually, maintain or attain safe separation in accordance with current regulations and good operating practices. Clear the airspace, in preparation for possible issuance of a resolution advisory.

2. RESOLUTION ADVISORIES (RA). Respond immediately by attending to the display and maneuvering as required, unless doing so would jeopardize the safe operation of the flight. For TCAS to function properly, initial vertical speed response is expected within 5 seconds of an RA, with maneuvering forces similar to those felt when responding to an ATC clearance to climb or descend "immediately." Vertical speed responses should avoid "red arcs or lines;" if applicable fly to the green arc or line. Recognize that any aircraft acquired visually may not necessarily be the threat aircraft, or the only threat aircraft being responded to.

3. RESOLUTION ADVISORIES TO INCREASE OR REVERSE AN RA MANEUVER. Initial response to such an advisory is expected within 2½ seconds of an RA. As above, avoid red arcs or lines and fly to the green arc or line.

4. PILOT-INITIATED RA's. Do not use TCAS-derived information, such as displayed traffic, as a basis for initiating a collision avoidance maneuver prior to the need arising. Unless the threat is immediate, wait for the TCAS Resolution Advisory.

5. OPPOSITE MANEUVERING. When a Resolution Advisory has been issued to you, do not maneuver in an opposite direction unless a visually acquired aircraft presents an immediate threat, bearing in mind that TCAS to TCAS coordination may have already occurred.

6. EXCESSIVE RESPONSE. Excessive responses to TCAS RA's are not desirable or appropriate, since you may not be aware of other traffic present, or of ATC clearances issued, or TCAS-to-TCAS coordination taking place.

7. SIMULTANEOUS RESPONSE. If it is possible to respond to a TCAS Resolution Advisory and to continue to satisfy an ATC clearance at the same time, do so. For example, you may be able to respond to a TCAS "climb" RA while maintaining a course to intercept a localizer. However, if a TCAS RA cannot be carried out within the current ATC clearance, respond immediately to the RA.

8. REGULATORY DEVIATIONS. If a TCAS RA requires maneuvering contrary to "right of way" rules, "cloud clearance" rules for VFR flight or any other criteria, pilots are expected to follow the TCAS RA's to resolve the immediate traffic conflict. Deviations should be kept to the minimum necessary to satisfy TCAS RA.

The three approved manufacturers of TCAS II (Traffic Alert and Collision Avoidance Systems) have reported a total of nearly 3,800 orders from major air carriers for installation of this equipment. TCAS II costs are in the range of $90,000 to $150,000.

9. ADVISING AIR TRAFFIC CONTROL. When responding to a TCAS RA requiring deviation from an ATC clearance, pre-coordination with the controlling ATC facility is not required. When a pilot deviates from an assigned altitude, he should notify ATC as soon as practicable, and return to the assigned altitude when clear of the conflicting traffic. This does not, however, preclude the possible need for reports of another type, such as NASA ASRS reports, required company reports, etc.

In en route situations, the controlling ATC center will receive an aural warning of the deviation. Other facilities will depend upon controller surveillance of the radar scope.

10. CRITICAL COCKPIT WARNINGS. Indications from stall warning equipment, windshear detectors and ground proximity warning systems take precedence over a TCAS RA.

11. CONTINUOUS USE. Unless otherwise specified by the operator or FAA, TCAS equipment is expected to be in continuous use while in flight in all airspace, including oceanic and international airspace.

12. TCAS FEEDBACK. Pilots should note and accurately report TCAS encounters to the Air Traffic Service, so that remedial improvements may be undertaken.

It should be borne in mind that TCAS is intended as a backup to visual avoidance, right-of-way rules and air traffic control. Used properly it should decrease the potential for mid-air collisions. TCAS does not alter or diminish the pilot's basic authority and responsibility for ensuring safe flight.

Remember that since TCAS does not see aircraft which are not transponder equipped, or aircraft with transponder failure, TCAS alone does not guarantee separation. There is always the possibility of mechanical failures.

Furthermore, TCAS resolution advisories may in some cases conflict with flight path requirements due to terrain, such as an obstacle-limited climb segment or an approach to rising terrain. Since many approved instrument procedures and IFR clearances involve avoiding high terrain or obstacles, it is particularly important that pilots using TCAS maintain situational awareness and exercise good judgment when following TCAS RA's. This includes frequent outside visual scanning and alert "see and avoid."

Pilots using TCAS must also keep in mind that resolution advisories may not be available outside of the TCAS reference performance envelope developed for the aircraft with regard to accuracy of resolution advisories (for changes in vertical direction and speed) during takeoff and landing.

Typically, during this phase of flight RA's will not be reliable between sea level and 5,300 feet MSL when the outside air temperature exceeds standard temperature by more or less than 50°F. This normally occurs when the aircraft is at low speed in specified limiting configurations during takeoff or landing at "hot day" high altitude airports (such as Mexico City or La Paz) or where temperatures are extremely cold. Under these circumstances TCAS should be operated in the "traffic advisories only" mode.

The "TA only" mode may also be selected by the pilot in circumstances such as the following:

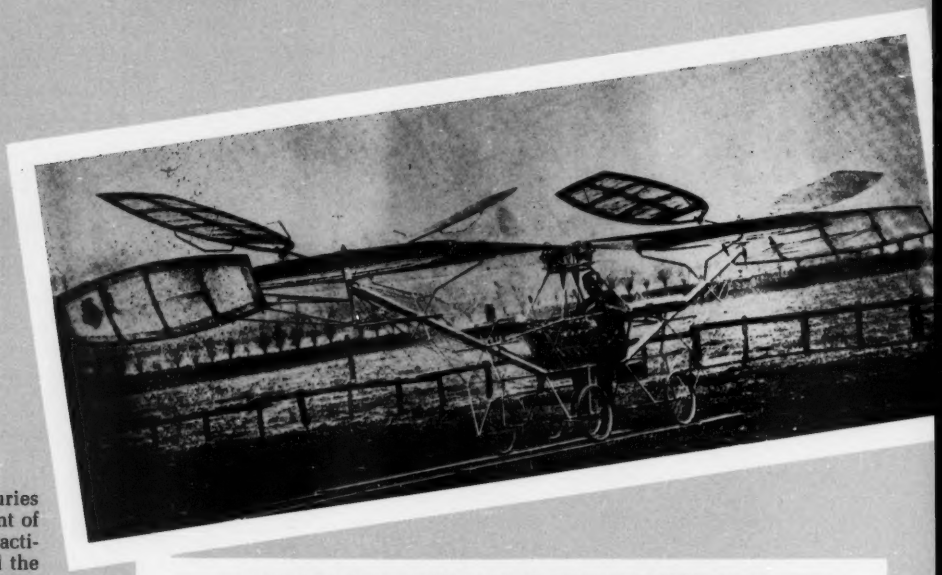
- During takeoff towards known nearby traffic which is in visual contact, and which could trigger an unwanted RA during initial climb (such as a helicopter passing near the departure end of the runway).
- During approaches to closely spaced parallel runways (typically 2,500 feet or less).
- When flying in known close proximity to other aircraft.
- At airports having a verified and significant potential for unwanted or inappropriate RA's in given circumstances.

For takeoff, TCAS should be activated just prior to taking the active runway for departure, in order to avoid unnecessary radar interrogations while on the ground. To preclude surprise advisories during takeoff and initial climb, the flight crew (time permitting) should assess nearby arrival and departure traffic.

A comprehensive Advisory Circular on the approved operational techniques and other use of TCAS II is scheduled for publication later this summer. For additional information contact William Petrusel, AFS-450, 800 Independence Avenue, SW., Washington, DC 20591. ■

FAMOUS FLIGHTS

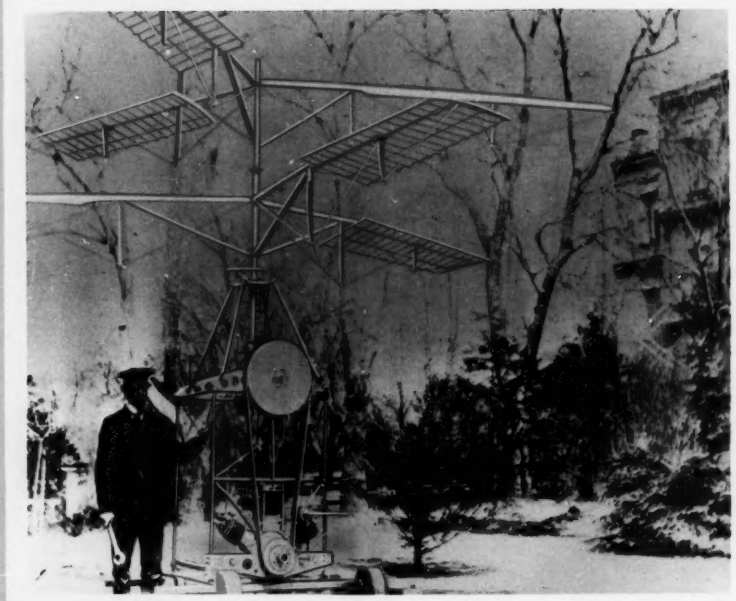
The Early Days of Helicopter Flight
A Photographic Sampler



Vertical flight is based on a centuries old concept. However, the development of this concept was slow and the first practical helicopter would not appear until the 1930's. Since that time it has evolved into the civilian and military workhorse of the sky.

The idea of a helicopter originated as a whirligig—a toy that for centuries was nothing more than wings attached to a stick and spun into the air by means of string or hands. The first documented helicopter design was around 1500— the inventive mind of Leonardo da Vinci envisioned an "air screw." The design was literally a rotating helical (spiral) wing which would screw its way upwards through the air. Unfortunately, da Vinci was a designer not a builder. There is no record that he ever put this, or any of his other aviation plans, to the test.

Over the next four centuries helicopter models would be devised by a variety of inventors including such 19th century notables as Sir George Cayley, Alphonse Penaud, and Thomas Edison. It would not be until the first decades of the 20th century that full size models would actually lift a man into the air, but they were highly unstable in the air with their bulky, unreliable engines and inadequate control systems. However, their limited successes would demonstrate that helicopter (vertical) flight was possible and pave the way for the first practical production models in the 1940's. The early 20th century helicopter designs shown on these pages bear little resemblance to helicopter we know today. We thought our readers might be interested in seeing some of the early, more successful models. ■



***1910, Russia** - Igor Sikorsky's second helicopter design had two contra-rotating lifting propellers. Each contained three delicate strut and canvas airfoil blades. The helicopter lifted its own weight of 400 pounds, but only if the pilot stayed on the ground. Rebuilt from his 1909 helicopter, this lighter aircraft was said to resemble a "huge butterfly." The photo was taken outside Sikorsky's father's house in Kiev. Later he emigrated to the U.S. where he would eventually design and build the first helicopter for military service in the early 1940s.*

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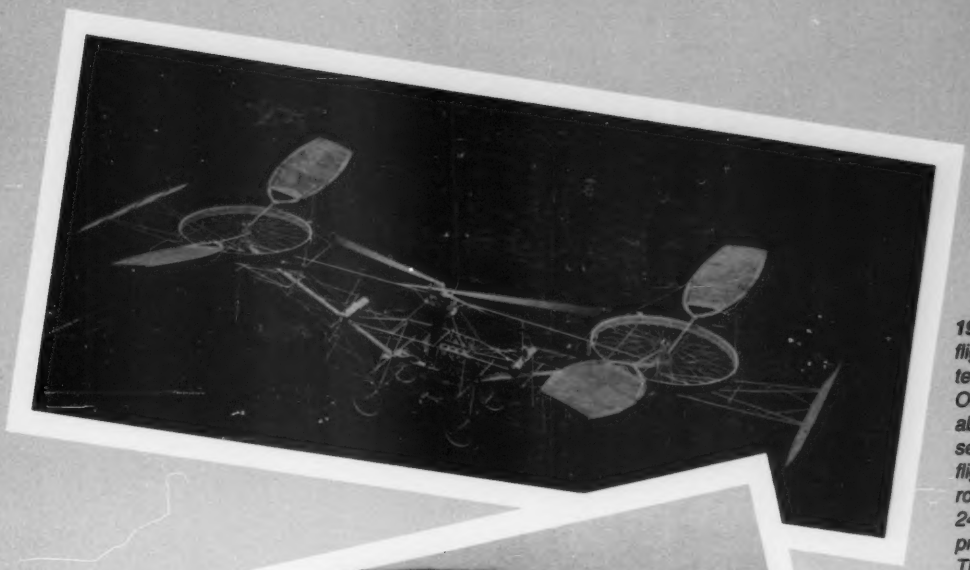
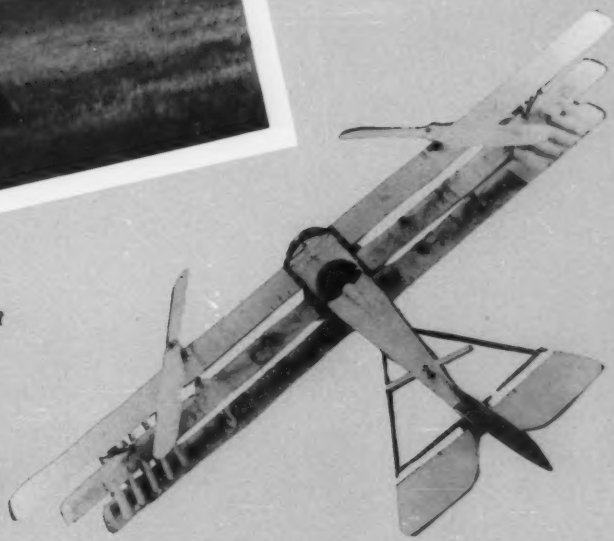
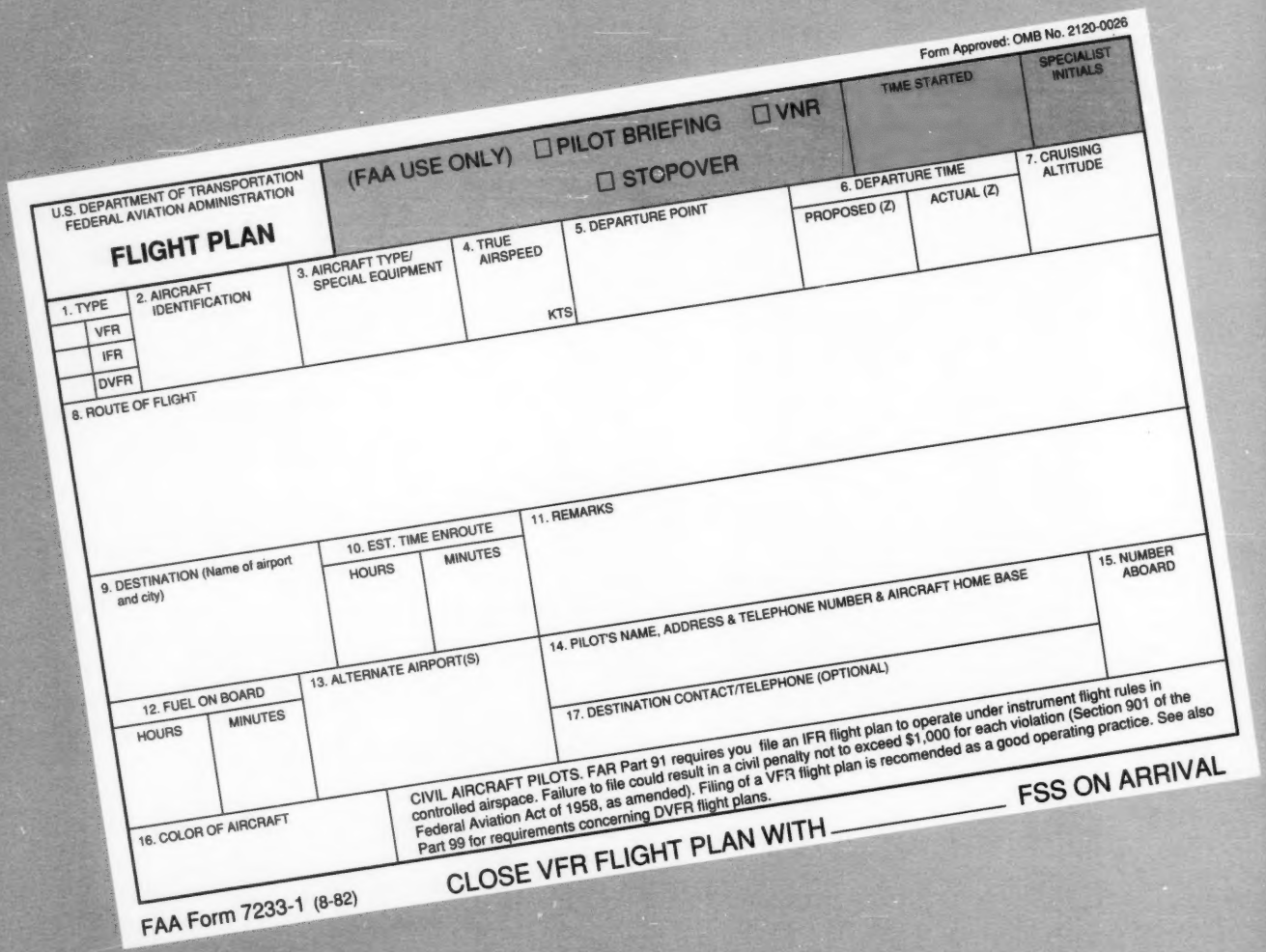


***1907, France** - The first true free flight by a man-carrying helicopter was achieved by Paul Cornu. On his first flight the aircraft rose about a foot off the ground for several minutes; his second flight, five feet. His compact two-rotor machine was powered by a 24 hp Antoinette engine which practically set in the pilot's lap. The aircraft's two paddle-shaped rotor blades were linked by the belt running over pulleys above Cornu's head. (Top left and right)*

***1909, U.S.** - Emile Berliner designed the first light-weight radial engine for airplanes and dreamed of "aeromobiles" that would go straight up. Shown is Model A, an unstable design which did get several feet of the ground. He and his son, Henry, would redesign and improve their working model until they finally achieved the first controlled helicopter flight in aviation history in 1924. Model H is also shown.*



Elapsed Time En Route



Form Approved: OMB No. 2120-0026

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

FLIGHT PLAN

(FAA USE ONLY) ☐ PILOT BRIEFING ☐ VNR ☐ STOPOVER

TIME STARTED | SPECIALIST INITIALS

1. TYPE: ☐ VFR ☐ IFR ☐ DVFR
2. AIRCRAFT IDENTIFICATION
3. AIRCRAFT TYPE/ SPECIAL EQUIPMENT
4. TRUE AIRSPEED — KTS
5. DEPARTURE POINT
6. DEPARTURE TIME — PROPOSED (Z) | ACTUAL (Z)
7. CRUISING ALTITUDE
8. ROUTE OF FLIGHT
9. DESTINATION (Name of airport and city)
10. EST. TIME ENROUTE — HOURS | MINUTES
11. REMARKS
12. FUEL ON BOARD — HOURS | MINUTES
13. ALTERNATE AIRPORT(S)
14. PILOT'S NAME, ADDRESS & TELEPHONE NUMBER & AIRCRAFT HOME BASE
15. NUMBER ABOARD
16. COLOR OF AIRCRAFT
17. DESTINATION CONTACT/TELEPHONE (OPTIONAL)

CIVIL AIRCRAFT PILOTS. FAR Part 91 requires you file an IFR flight plan to operate under instrument flight rules in controlled airspace. Failure to file could result in a civil penalty not to exceed $1,000 for each violation (Section 901 of the Federal Aviation Act of 1958, as amended). Filing of a VFR flight plan is recomended as a good operating practice. See also Part 99 for requirements concerning DVFR flight plans.

CLOSE VFR FLIGHT PLAN WITH _____ FSS ON ARRIVAL

FAA Form 7233-1 (8-82)

We have been asked to clarify a misapprehension which followed the publication of our article, "The Significance of ET," in the July/August 1989 issue of *FAA Aviation News*.

The article discussed the information required for IFR flight planning, in particular the notation for Blocks 9 and 10 of the FAA IFR flight plan form (Form 7233-1). Block 9 asks for the destination airport and city, and Block 10 asks for the estimated time en route. The only FAA definition of this requirement, in a current publication is in FAR §91.153 and §91.169, which states that an IFR flight plan must contain "The point of first intended landing, and the estimated elapsed time until over that point."

Perhaps it would have been well to mention that pilots flying outside of the United States and using the International Civil Aviation Organization (ICAO) international IFR flight plan form are required to provide similar, but not identical, information. The ICAO form asks for the total estimated elapsed time, defined as "The estimated time required from takeoff to arrive over that designated point, defined by reference to navigation aids, from which it is intended that an instrument approach will be commenced or, if no navigation aid is associated with the destination aerodrome, to arrive over the destination aerodrome."

The Department of Defense international flight plan form also uses this type of information. ■

FAR Update

By popular demand, *FAA Aviation News* is publishing a complete list of the Federal Aviation Regulations (FARs) and their latest changes and prices. After this we will print the complete list yearly, with any significant changes mentioned bi-monthly on the "Briefs" or "News" page as they occur.

Many of the FARs are reprinted commercially, some in book form. It is important to keep in mind that the rules are amended often in some cases, and existing provisions may be nullified or changed by this process unless they are updated continuously. Commercial publications may or may not provide updates.

The FARs are sold in two ways by the Superintendent of Documents: subscription and single sales. When you order a subscription, for which there is an annual charge, the changes will be sent to you automatically as they are issued. Single sales are a different matter. The changes to these parts are infrequent, and no direct notice of a change is sent out. Therefore, you must order and pay for each change as it is issued.

Another way of obtaining FARs is to purchase the bound volumes of the U.S. Code of Federal Regulations. Three volumes of Title 14 of the CFRs contain the Federal Aviation Regulations:

Part 1 — 59 (SN 869-004-00042-1) $21.00
Part 60 — 139 (SN 869-004-00043-0) $19.00
Part 140 — 199 (SN 869-004-0004-8) $9.50

These volumes are only updated annually, so the latest changes would have to be obtained from another source.

The following pages contain the current status and price list for the loose-leaf FARs. Color high-lighting indicates those rules considered of special interest to general aviation pilots.

To order any of the FAR parts, send check, money order, or credit card number to the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402-9325. Add a 25% charge for foreign mailing. Please use the stock number. ■

Parts sold on Subscription Service

Part	Title	Code Letter	Price Domestic	Price Foreign	Changes Issued
1	Definitions and Abbreviations	FA001	$30.00	$37.50	13
11	General Rulemaking Procedures	FA011	27.00	33.75	20
13	Investigation and Enforcement Procedures	FA013	34.00	42.50	10
21	Certification Procedures Products and Parts	FA021	34.00	42.50	33
23	Airworthiness Standards: Normal, Utility, and Acrobatic Category Airplanes	FA023	35.00	43.75	27
25	Airworthiness Standards: Transport Category Airplanes	FA025	38.00	47.50	28
27	Airworthiness Standards: Normal Category Rotorcraft	FA027	30.00	37.50	21
29	Airworthiness Standards: Transport Category Rotorcraft	FA029	36.00	45.00	23
33	Airworthiness Standards: Aircraft Engines	FA033	27.00	33.75	8
36	Noise Standards: Aircraft Type and Airworthiness Certification	FA036	32.00	40.00	23
43	Maintenance, Preventive Maintenance, Rebuilding, and Alterations	FA043	27.00	33.75	13
45	Identification and Registration Marking	FA045	30.00	37.50	15
47	Aircraft Registration	FA047	28.00	35.00	8
61	Certification: Pilots and Flight Instructors	FA061	33.00	41.25	21
63	Certification: Flight Crewmembers Others Than Pilots	FA063	25.00	31.25	11
65	Certification: Airmen Other Than Flight Crewmembers	FA065	30.00	37.50	13
91	General Operating and Flight Rules	FA091	53.00	66.25	2
	*Preamble		free		
93	Special Air Traffic Rules and Airport Traffic Patterns	FA093	31.00	38.75	23
103	Ultralight Vehicles	FA103	32.00	40.00	5
108	Airplane Operator Security	FA108	25.00	31.50	7
121	Certification and Operations: Domestic, Flag, and Supplemental Air Carriers and Commercial Operators of Large Aircraft	FA121	70.00	87.50	76
125	Certification and Operations: Airplanes Having a Seating Capacity of 20 or More Passengers or a Maximum Payload Capacity of 6,000 Pounds or More	FA125	30.00	37.50	17
127	Certification and Operations of Scheduled Air Carriers With Helicopters	FA127	26.00	32.50	21
129	Operations of Foreign Air Carriers	FA129	29.00	36.25	19
135	Air Taxi Operators and Commercial Operators	FA135	43.00	53.75	35
137	Agricultural Aircraft Operations	FA137	32.00	40.00	8
139	Certification and Operations: Land Airports Serving Certain Air Carriers	FA139	14.00	17.50	2
145	Repair Stations	FA145	29.00	36.25	10
150	Airport Noise Compatibility Planning	FA150	30.00	37.50	2
152	Airport Aid Program	FA152	31.00	38.75	12
159	National Capital Airports	FA159	30.00	37.50	13

*See "News" (page 14) for further explanation.

FAR Update (Continued)

Parts Sold on Single Sale Basis

Part	Title	Price[1]
31	Airworthiness Standards: Manned Free Balloons (SN 050-007-00246-7)	2.25
	Change 1 (050-007-00361-7)	1.75
	Change 2 (050-007-00559-8)	4.50
	Change 3 (050-007-00842-2)	1.25
35	Airworthiness Standards: Propellers (SN 050-007-00247-5)	2.75
	Change 1 (050-007-00363-3)	3.25
	Change 2 (050-007-00369-2)	3.00
	Change 3 (050-007-00558-0)	4.50
	Change 4 (050-007-00845-7)	1.25
39	Airworthiness Directives[2] (SN 050-007-00229-7)	1.75
49	Recording of Aircraft Titles and Security Documents (SN 050-007-00232-7)	1.75
	Change 1 (050-007-00336-6)	2.00
	Change 2 (050-007-00792-2)	1.00
67	Medical Standards and Certification (SN 050-007-00248-3)	3.50
	Change 1 (050-007-00341-2)	1.75
	Change 2 (050-007-00611-0)	4.50
	Change 3 (050-007-00617-9)	2.75
	Change 4 (050-007-00861-9)	1.00
71	Designation of Federal Airways, Area Low Routes Controlled Airspace, and Reporting Points[3] (SN 050-007-00273-4)	3.75
	Change 1 (050-007-00290-4)	2.00
	Change 2 (050-007-00662-4)	1.25
	Change 3 (050-007-00695-1)	1.00
	Change 4 (050-007-00697-7)	1.00
	Change 5 (050-007-00834-1)	1.00
	Change 6 (050-007-00816-3)	1.00
	Change 7 (050-007-00870-8)	1.25
73	Special Use Airspace[3] (SN 050-007-00274-2)	1.75
	Change 1 (050-007-00291-2)	2.00
	Change 2 (050-007-00402-8)	1.75
	Change 3 (050-007-00815-5)	1.00
	Change 4 (050-007-00850-3)	1.00
75	Establish of Jet Routes and Area High Routes[3] (SN 050-007-00275-1)	2.75
	Change 1 (050-007-00326-9)	2.00
77	Objects Affecting Navigable Airspace (SN 050-007-00276-9)	4.50
	Change 1 (050-007-00855-4)	1.00
95	IFR Altitudes[3] (SN 050-007-00277-7)	1.75
	Change 1 (050-007-00285-8)	1.75
97	Standard Instrument Approach Procedures[4] (SN 050-007-00278-5)	3.00
	Change 1 (050-007-00471-1)	1.75
99	Security Control of Air Traffic (SN 050-007-00830-9)	1.75
	Change 1 (050-007-00831-7)	1.00
	Change 2 (050-007-00873-2)	1.75
101	Moored Balloons, Kites, Unmanned Rockets, and Unmanned Free Balloons (SN 050-007-00223-8)	1.75
	Change 1 (050-007-00242-4)	1.75
105	Parachute Jumping (SN 050-007-00315-3)	3.25
	Change 1 (050-007-00344-7)	1.75
	Change 2 (050-007-00431-1)	3.00
	Change 3 (050-007-00663-2)	1.25
	Change 4 (050-007-00696-9)	1.00
	Change 5 (050-007-00700-1)	1.25
	Change 6 (050-007-00744-2)	1.25
107	Airport Security (SN 050-007-00468-1)	3.50
	Change 1 (050-007-00588-1)	2.50
	Change 2 (050-007-00607-1)	2.25
	Change 3 (050-007-00736-1)	1.25
	Change 4 (050-007-00814-7)	1.25
	Change 5 (050-007-00836-8)	1.50
109	Indirect Air Carrier Security (SN 050-007-00512-1)	1.75
	Change 1 (050-007-00856-2)	1.00
133	Rotorcraft External Load Operations (SN 050-007-00318-8)	1.75
	Change 1 (050-007-00365-0)	3.50
	Change 2 (050-007-00380-3)	2.00
	Change 3 (050-007-00389-7)	1.75
	Change 4 (050-007-00450-8)	1.75
	Change 5 (050-007-00748-5)	2.00
	Change 6 (050-007-00843-1)	1.25
	Change 7 (050-007-00874-1)	1.25
141	Pilot Schools (SN 050-007-00322-6)	3.50
	Change 1 (050-007-00620-9)	2.25
	Change 2 (050-007-00844-9)	1.75
143	Ground Instructors (SN 050-007-00249-1)	3.00
147	Aviation Maintenance Technician Schools (SN 050-007-00250-5)	3.50
	Change 1 (050-007-00350-1)	2.25
	Change 2 (050-007-00437-1)	2.25
149	Parachute Lofts (SN 050-007-0221-1)	1.75
151	Federal Aid to Airports (SN 050-007-00261-1)	5.00
153	Acquisition of U.S. Land for Public Airports (SN 050-007-00262-9)	1.75
	Change 1 (050-007-00858-9)	1.00
154	Acquisition of U.S. Land for Public Airports Under the Airport and Airway Development Act of 1970 (SN 050-007-00269-6)	1.75
	Change 1 (050-007-00388-9)	1.75
	Change 2 (050-007-00549-1)	1.75
155	Release of Airport Property from Surplus Property Disposal Restrictions (SN 050-007-00270-0)	1.75
	Change 1 (050-007-00550-4)	1.75
157	Notice of Construction, Alteration, Activation, and Deactivation of Airports (SN 050-007-00279-3)	2.75
169	Expenditure of Federal Funds for Non-military Airports or Air Navigation Facilities Thereon (SN 050-007-00280-7)	2.25
	Change 1 (050-007-00851-1)	1.00
171	Non-Federal Navigation Facilities (SN 050-007-00281-5)	4.50
	Change 1 (050-007-00297-1)	3.75
	Change 2 (050-007-00619-5)	5.00
	Change 3 (050-007-00676-4)	1.00
	Change 4 (050-007-00734-5)	1.50
	Change 5 (050-007-00832-5)	2.75
	Change 6 (050-007-00849-0)	1.00
183	Representatives of the Administrator (SN 050-007-00233-5)	3.00
	Change 1 (050-007-00352-8)	1.75
	Change 2 (050-007-00398-6)	1.75
	Change 3 (050-007-00503-2)	1.75
	Change 4 (050-007-00527-0)	1.75
	Change 5 (050-007-00634-9)	3.50
	Change 6 (050-007-00862-7)	1.00
185	Testimony by Employees and Production of Records in Legal Proceedings and Services of Legal Process and Pleadings (SN 050-007-00237-5)	1.75
	Change 1 (050-007-00859-7)	1.00
187	Fees (SN 050-007-00234-3)	2.75
	Change 1 (050-007-00618-7)	2.75
189	Use of Federal Aviation Administration Communication System (SN 050-007-00235-1)	2.75
	Change 1 (050-007-00867-8)	1.00
191	Withholding Security Information From Disclosure Under the Air Transportation Security Act of 1974 (SN 050-007-00359-5)	1.75
	Change 1 (050-007-00502-4)	1.75
	Change 2 (050-007-00-857-1)	1.00

[1]Add 25% for foreign handling.

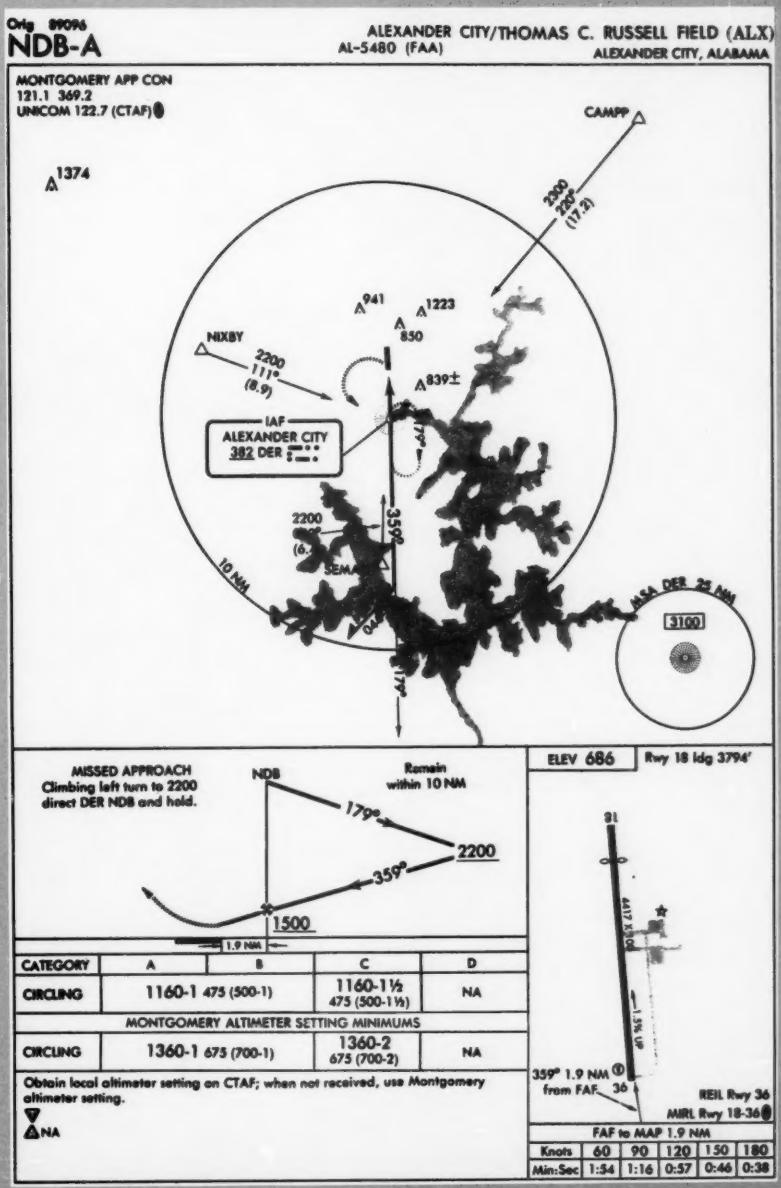
[2]Due to their length, complexity, and frequency of issuance, individual Airworthiness Directives (ADs) are published separately in the Federal Register. Book 1 contains all ADs issued prior to 1971 and is sold as a single sale item. Volume I, for small aircraft (AD11), is $16.25; Volume II, for large aircraft (AD12), is $13. Book 2 contains all ADs after 1970 and is sold on a two-year subscription and updated biweekly. Volume I, for small aircraft (AD21), is $113; Volume II, for large aircraft (AD22), is $130. Add 25% for foreign handling. Order from: DOT/FAA, Attn: AAC-23, P.O. Box 25461, Oklahoma City, OK 73125.

[3]Due to their length, complexity, and frequency of issuance, individual airspace designations, airways descriptions, restricted areas, jet route descriptions, and IFR altitudes are not included in the publication of these basic Parts. Such descriptions are published in the Federal Register and depicted on appropriate aeronautical charts. Aeronautical charts can be obtained from the Distribution Branch, N/CG33, NOS, NOAA, Riverdale, MD 20737-1199.

[4]Standard Instrument Approach Procedures are published in the Federal Register by reference to FAA documents which are available for examination in the Rules Docket (AGC-10) and the National Flight Data Center, FAA Headquarters, Washington, DC, and at the appropriate FAA regional offices and Flight Inspection District Offices. These Instrument Approach Procedures Charts can be obtained from the Distribution Branch, N/CG33, National Ocean Service, NOAA, Riverdale, MD 20737-1199.

Verbal Confusion

ON APPROACH



The Forum page of our April/May 1990 issue included a letter from an Alabama pilot who, when conducting the NDB-A (nondirectional beacon) approach to Alexander City, had been directed by Air Traffic Control to "hold as published." The pilot wanted to know if he had been expected to hold south on the 179 degree bearing, and whether he should be making righthand or lefthand turns. Our reply stated simply that he would be expected to hold south on the 179 degrees magnetic bearing from the NDB, with righthand turns.

The letters we have received from other pilots in regard to this situation, with contradictory interpretations, suggest that there is some confusion about the meaning of terms commonly used in instrument approach procedures.

One pilot wrote, "I submit that you would be expected to hold south on magnetic bearing 359° magnetic. This is the bearing depicted on the chart."

Another wrote, "Bearings are not radials; they indicate a direction toward a point ... your answer misleads, and may cause someone to track outbound on a bearing 179° magnetic away from the holding fix."

And also, "The correct answer would be to hold south on the 359° magnetic bearing to the NDB. Remember that a position around an NDB is named as the bearing to the station, whereas the position around a VOR is defined by the numbered radial from the station."

In spite of these apparently contradictory opinions, in all likelihood the chances are that any qualified instrument pilot who had the approach plate in hand would execute the approach, including the holding pattern, correctly. The graphic presentation is much easier to follow than any verbal description, because words often have variable meanings.

For example, the term "bearing" is defined in the Airman's Information Manual as "The horizontal direction to or from any point, usually measured clockwise through true north, magnetic north or some other reference point through 360 degrees (Italics added)."

With regard to the Alexander City NDB-A approach procedure, the approach course to the final approach fix, as shown by the heavy line with an arrowhead pointer, is shown as 359° magnetic bearing to the fix. The inbound leg of the holding pattern for this fix is shown as coinciding with 179° magnetic bearing from the fix. This may sound confusing, but if you have the approach plate before you there should not be any problem.

If you have to shoot an approach for which you do not have the plate in the cockpit, you should so inform air traffic control. They will issue vectors or otherwise assist you. ■

MUSEUM UPDATE. After being closed for nine months, College Park Airport Museum reopened the first week of June for regular tours. Currently owned by the Maryland-National Capital Park and Planning Commission (M-NCPPC), College Park Airport is the oldest continuously operating airport in the U.S. and is located just northeast of Washington, DC.

The temporary closing was due to transit system construction, requiring the airport's access road to be rerouted and the museum relocated. The new airport entrance road is on 51st Avenue (which will eventually be renamed to honor pioneer pilot, Cpl. Frank Scott).

RADIO COMMUNICATIONS RULE IN ARSA'S CLARIFIED

Effective May 29, 1990, FAA has amended FAR Part 91.130 (§91.88 in the old Part 91, which became obsolete on August 18, 1990) with language which will ensure that the correct air traffic control facility is aware of all aircraft operating in an ARSA (Airport Radar Services Area).

FAR §91.130(c) has been amended to indicate that pilots must be in radio contact "with the ATC facility having jurisdiction over the airport radar service area." This replaces the phrase indicating simply that the pilot must be in contact "with ATC."

Similarly, FAR §91.130(d) has been revised to read:

(d) Departures. No person may operate an aircraft within an airport radar service area except as follows:

(1) From the primary airport or satellite airport with an operating control tower, unless two-way radio communication is established and maintained with the control tower in accordance with §91.87 of this part, and thereafter as instructed by ATC while operating in the airport radar service area.

(2) From a satellite airport without an operating control tower, unless two-way radio communication is established as soon as practicable after departing and thereafter maintained with the ATC facility having jurisdiction over the airport radar service area."

Also, FAR §91.130(f) has been amended by replacing the words "by ATC" with the words "by the ATC facility having jurisdiction over the airport radar service area."

The appropriate frequencies for each ARSA are published on sectional charts.

For further information contact Mr. Bill Davis, FAA, ATP-230, 800 Independence Ave., SW, Washington, DC 20591. Telephone (202) 267-8783.

IVRS BEING DISCONTINUED

On September 30, 1990, the Interim Voice Response System (IVRS) will be discontinued. Federal procurement regulations prohibit the continuation of services beyond this date, as the contract has already been extended several times until the Direct User Access Terminal Service (DUATS) was implemented (earlier this year). The contract for IVRS was extended to allow user transition.

FAA recognizes that not all pilots have access to a personal computer required by DUATS. However, pilots may telephone the automated flight service stations to access the Telephone Information Briefing System and/or talk to a specialist. Additionally, there are a variety of commercial vendors who provide direct access to a weather data base for a nominal fee. FAA is also exploring various alternatives to encourage the private sector to provide telephone services similar to IVRS.

COCKPIT DATA RECORDING REQUIREMENT EXTENDED

The Federal Aviation Regulations have been amended to require digital flight data recorders and cockpit voice recorders to be installed in a broad category of airplanes and rotorcraft operated by air carriers and commuter airlines, as well as in selected general aviation aircraft. The amendments are expected to provide more information to accident investigators and to help determine measures needed to prevent accidents.

Compliance date for this rule change is October 11, 1991. For further information contact Mr. Frank Rock, FAA, AIR-120, 800 Independence Ave., SW, Washington, DC 20591. Telephone (202) 267-9567.

PART 91 REALIGNMENT AND CHANGES IN EFFECT AS OF AUGUST 18

The revised General Operating and Flight Rules, better known as Federal Aviation Regulations Part 91, went into effect on August 18, 1990. All operators and flight schools are now required to use the new section numbers. A cross-reference was published in the November/December 1989 issue of *FAA Aviation News*.

This is the first major realignment of Part 91 since it was codified in its present form in 1963. The revision, a response to the public's complaints on the complexity of Part 91, makes the rule more understandable by dividing it into 10 subparts instead of five, and groups related information together. Subparts A through E pertain mostly to VFR pilots flying small reciprocating engine airplanes. Subparts F through J apply primarily to larger aircraft.

There are five rule changes incorporated into the revised Part 91:

1) FAR §91.117 allows reciprocating-powered aircraft to be operated at 200 knots in an airport traffic area.

2) FAR §91.135 allows operators desiring authorizations to deviate from positive control area and route segment requirements to utilize a 48-hour oral notification system.

3) FAR §91.203(a)(2) concerns the operation of an aircraft outside the U.S. without an original certificate. Only a telex copy of the Certificate of Aircraft Registration may be used as a temporary certificate and accepted by U.S. Customs Officers as proof of ownership.

4) FAR §91.205, §91.09, and §91.511 define "shore" as it is used in these sections to exclude tidal flats.

5) FAR §91.409 allows operators of turbine-powered rotorcraft to use an alternate inspection program, such as an FAA-approved inspection program.

The Revised Part 91 may be ordered from the U.S. Government Printing Office, Superintendent of Documents, Washington, DC 20402 at a subscription cost of $53.00 ($66.25 foreign). The preambles will not be included in this part. For a free copy of a particular FAR Part 91 preamble, send your request to:

DOT, Utilization and Storage Section, M-443.2
Washington, DC 20590

To be placed on the mailing list to receive all future Revised Part 91 Preambles, send your request to be added to the Preamble Mailing List to:

DOT, Distribution Requirements Section, M-494.1
Washington, DC 20590

• Pilots and Perestroika

I am sending this comment at the risk of sounding disloyal to my fellow general aviation comrades. I am forced to say that the FAA in their general aviation publication has taken the lead so far in at least hinting that their side of the fence is less than perfect.

To wit, in the Jan/Feb 1990 FAA Aviation News *the statement: "Controller injudicious use of such words as, 'expedite' or 'immediately' ... carry a sense of urgency or emergency, which may not be justified, and could provoke a pilot error."*

I think any attempt at teamwork between the FAA and general aviation deserves to be applauded.

Peter W. Capone
Waco, TX

• Flight Review

I am still a little unclear about the new FAA regulations concerning duration of the BFR or AFR.

I passed my initial private pilot flight test and received my initial certification one month prior to August 31, 1989. Is this initial passage now valid for twelve or twenty-four months?

Does that initial test qualify as a BFR or AFR?

Stephen P. Stone, M.D.
Springfield, IL

A flight test taken one month prior to August 31, 1989, will relieve you of the need for another flight review until the first day of August 1991. Thereafter, you will need an Annual Flight Review (AFR), unless your flight time exceeds 400 hours, or you obtain an instrument rating.

• Homebuilt on Instruments

What process is entailed in order to certify a homebuilt aircraft for IFR flight? Let us assume the homebuilt is a popular model, many of which are currently flying in the experimental category.

David L. Miller
Tujunga, CA

Your best procedure would be to contact the FAA Aircraft Certification Office in your area. That would be at 3229 E. Spring Street, Long Beach, CA 90806. The manager's name is Frederic Lee, and his telephone number is (213) 988-5218.

Good luck with your instrument flying.

• SIDs and Part 91

Do the takeoff weather minimums for standard instrument departures (SIDs) apply to Part 91 operations too, or just to air carrier operations. And if so, why?

Bill Pepin
Seattle, WA

See answer to IFR Takeoff Minimums.

• IFR Takeoff Minimums

FAR Part 91.116(f) sets takeoff minimums for IFR operations under Parts 121, 125, 127, 129, and 135, but not for Part 91 operations. However, both the Airmen's Information Manual *[Par. 325(b)] and the* Instrument Approach Procedures *books imply that these IFR takeoff minimums also apply to Part 91 ops. Why?*

Bill Pepin
Seattle, WA

FAA AVIATION NEWS welcomes comments from our readers. No anonymous letters will be used, but names will be withheld on request. Address: FAA AVIATION NEWS, AFS-20, Washington, DC 20591.

AIM Paragraph 325(b) discusses the relationship between obstacle clearance, following takeoff, and weather minimums—which affects all IFR departures. The statement in front of the instrument approach booklets simply give the source of information regarding takeoff minimums (old FAR §91.116, now §91.175).

Although Part 91 operators are not required to observe IFR takeoff weather minimums, most such pilots will not depart in weather which might jeopardize obstacle clearance, or be below landing minimums at the given airport (considering the possibility of circumstances which might require an immediate return to the airport).

INSTRUMENT CORNER

• Creditable IFR Approaches

I was very interested in your answer to J. Herr in the "Instrument Corner" in the March/April 1990 edition.

In reading your answer verbatim, you seem to take the position that any approach which may be logged toward meeting currency requirements must be conducted without outside reference "to minimums [DH or MDA]."

What then about the approach which remains in actual IMC until past the Initial Approach Fix, but thereafter breaks out at some point before reaching either the DH or MDA? Do you consider that approach to not be sufficient to be logged as one of the required six under FAR §61.57 (e)(1)(i)?

If that is the case, then I doubt that most of the "logged approaches under §61.57 (e)(1)(i) would qualify. Most instrument approaches do not remain in actual IMC entirely to the DH or MDA. If your position is correct, then it would almost require that the "instrument current" pilot would need to have flown and logged the required six approaches either in a simulator or in a plane while wearing a vision-limiting device and with a copilot or safety pilot; in either case completely to DH or MDA. Perhaps the PIC would be required to don the vision-limiting device immediately upon breaking out and then continue the approach to the MDA or DH in order to "log" the approach under your interpretation?

I personally find your interpretation questionable. It would seem that you take the position that for any approach to be "genuine" insofar as logging for currency, it must necessarily continue to the DH or MDA without outside visual reference! To find the actual weather conditions coinciding with the published minimums is a rare situation indeed!

I will be interested to read your response.

Dale P. Jewett
Hutchinson, KS

I read in your March/April 1990 edition on IFR currency something that bothered me. You state in the last paragraph that the instrument approach must be flown to minimums solely by reference to instruments.

One of my favorite things to do on an appropriate weekend is to go up with my 16 year old son, who is a student pilot, and log some "actual." The area around Greensboro has got every type of approach imaginable within twenty miles. It is possible within a couple of hours to shoot a wide range of approaches in actual conditions. However, rarely are the conditions optimum enough where I can shoot an approach down to published minimums. Does this mean that I am not keeping up my IFR currency? Can this only be done with nature's cooperation and minimum ceilings? Do I always have to have a safety pilot and be under the hood?

J. Frank Roe
Greensboro, NC

The wording of our reply was not clear. Once you have been cleared for and have initiated an instrument approach in IMC, you may log that approach for instrument currency, regardless of the altitude at which you break out of clouds. When doing a simulated IFR approach you should fly the prescribed instrument approach procedure to DH or MDA to maximize the training benefit.

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Remedial Training

(Continued from page 3)

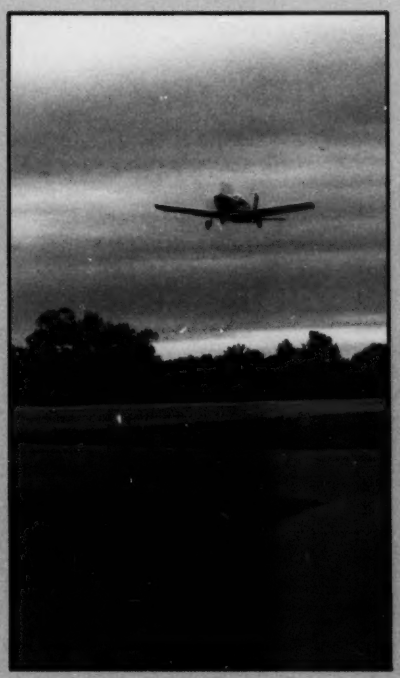
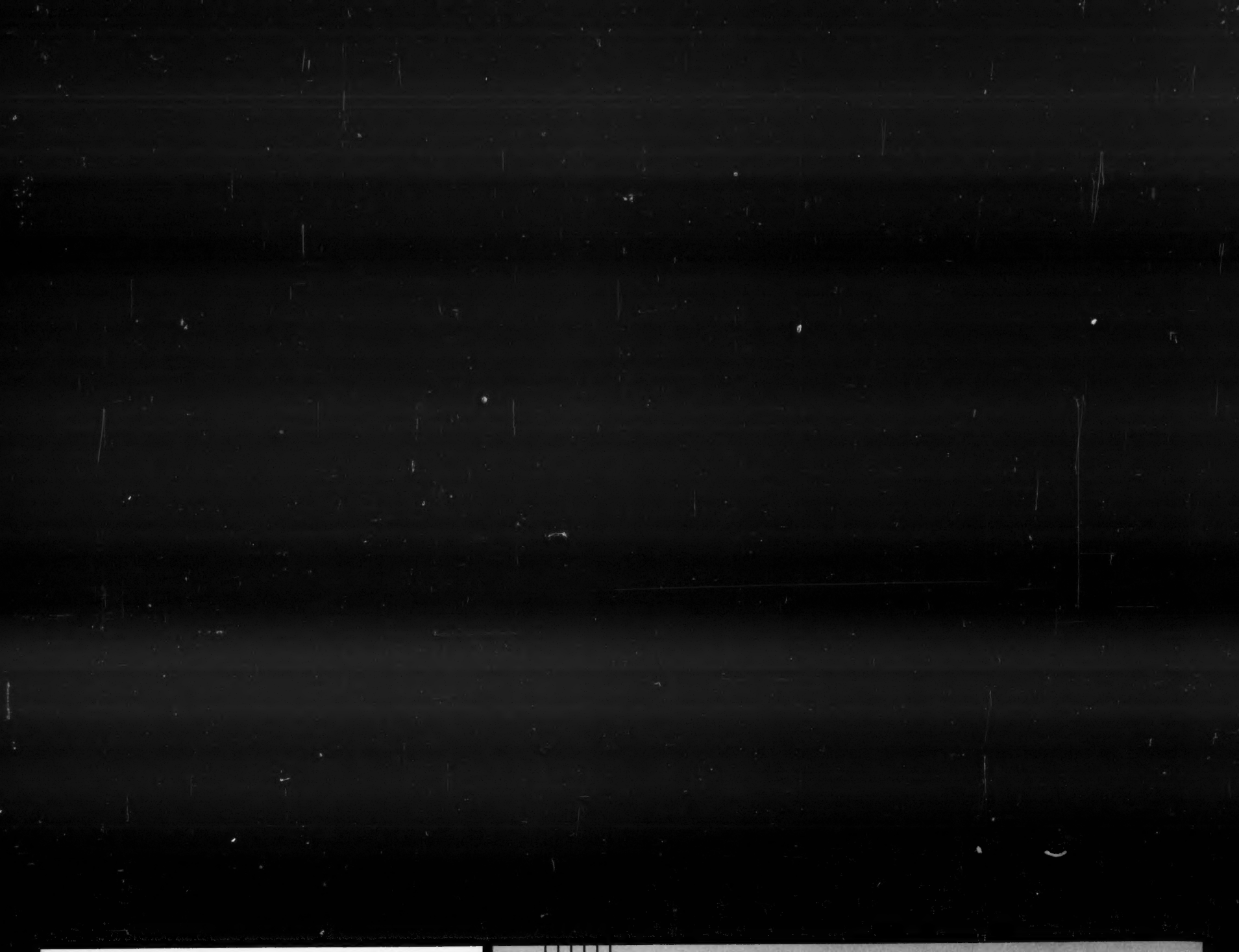
training is offered, the supervising APS reminds the airman of several facts before the training agreement is signed.

1) All expenses incurred for the prescribed training must be borne by the airman.

2) All remedial training must be successfully completed as soon as possible, but no longer than 120 days after FAA becomes aware of the violation. And the violation will become a matter of record for a two-year period, after which it will be expunged from the enforcement records file.

3) And failure to successfully complete the training program within the time specified might result in nullifying the agreement and appropriate legal enforcement action being taken.

A progress report, either written or oral, is usually required, as part of the program, from the instructor giving the required instruction. After the training is completed, the airman will return to the FSDO and present the APS with a letter from the instructor certifying that the airman has satisfactorily completed all of the elements listed in the remedial training syllabus. The APS compares the letter from the flight instructor with the written training agreement and determines that the terms of the agreement have been satisfied. The APS then advises the pilot that the prescribed remedial training program has been successfully completed and that a letter of correction will be sent to close out this matter. The Letter of Correction constitutes closing the enforcement action with a administrative action which will be expunged in two years.

In the past, compliance with the Federal Aviation Regulations was mainly achieved through the threat of punitive action. As a result, the Remedial Training Program was devised as a response to the public's complaint that the FAA was out to get airmen, not help them. The new program combines an effort to promote aviation safety with a fairer way of dealing with airmen by considering the circumstances on a case by case basis. The FAA will now consider the rehabilitative approach in dealing with non-compliance.

Since the primary mission of the FAA is to promote aviation and to do everything within its power and resources to improve aviation safety, the new program is one means to accomplish that mission. So the next time you hear, "Hello, I'm from the FAA and I'm here to help you," they really do mean it. ■